DISPLAY METHOD, DISPLAY APPARATUS FOR GAME MACHINE, GAME MACHINE AND INFORMATION DISPLAY SYSTEM

Background of the Invention

Technical Field to which the Invention Belongs

The present invention relates to a display method, a display apparatus for a game machine and a game machine in which a gaming image is projected on the game board of the game machine in accordance with a gaming state, and an information display system which is constructed so as to be capable of displaying images for displaying various information items.

Related Art

Disclosed as a *pachinko* (Japanese upright pinball) machine (game machine) of this type in JP-UM-A-7-24381 is a *pachinko* (*pachinko* machine) wherein a gaming image can be projected (projection) on the light-transmitting optical image display portion (2) of a front panel (1) by the use of a rear projection type projector (4) . In this case, the projector is constructed including a liquid crystal display element, a light source, etc., and a projection lens (5) is interposed between the projector and the front panel. In the *pachinko* machine, in the first place, displaying image data corresponding to a gaming state is generated by a display control unit, and the displaying image data is output to the liquid crystal display element.

Subsequently, light emitted from the light source is modulated into a optical image (projection light) corresponding to the displaying image data by the liquid crystal display element inside the projector, and the projection light is

emitted from the projector. On this occasion, the projection light emitted by the projector is enlarged by the projection lens and is projected on the light-transmitting optical image display portion of the front panel, and the gaming image (animation) corresponding to the gaming state is displayed on the light-transmitting optical image display portion.

Besides, monitors (such as television receivers) for watching various information items, such as a sportscast, a weather forecast and a commercial (advertisement) broadcast, are installed in a *pachinko* parlor where the *pachinko* machines of this type are installed. Accordingly, players who are playing with the *pachinko* machines near the monitors can watch the various information items displayed on the monitors.

Meanwhile, a point to be improved as stated below is involved in the prior-art *pachinko* machine. In the prior-art *pachinko* machine, the gaming image corresponding to the gaming state is displayed on the light-transmitting optical image display portion. In this case, when the game with the *pachinko* machine is continued over a long time, it is sometimes boring. Since, however, the display control unit in the *pachinko* machine of this type is constructed so as to be capable of displaying only the images necessary for the game with the *pachinko* machine (gaming images), various information items which are directly irrelevant to the game (such as a sportscast and an advertisement broadcast) cannot be displayed while the game is being played by the player, of course, and even when the *pachinko* machine is in a non-gaming state. For the purpose of permitting the players to watch the various information items in the *pachinko* parlor, accordingly, the monitors need to be installed separately from the *pachinko* machines in spite of the fact that *pachinko* machines capable of

displaying the images are installed. For this reason, there are the problems that the interior of the parlor (hall) becomes smaller in area in correspondence with the occupied space of the monitors used exclusively for displaying the information, and that expenses run up in correspondence with the installation cost of the monitors. Besides, in the present-day *pachinko* parlor, in order to guide (advertise) event information etc. to customers by way of example, an advertisement method (information display method) wherein posters printed to that effect are pasted in the parlor is commonly employed. Such an advertisement method, however, lacks in novelty, resulting in the problem that it is difficult to impress the event information upon the customers.

The present invention has been made in view of such problems, and has for an object to provide a display method, a display apparatus for a game machine, a game machine and an information display system in which a space is not occupied by any display apparatus used exclusively for displaying information, and in which various information items can be displayed at a low cost and by a novel method.

Summary

In order to accomplish the above object, a display method according to the present invention consists in that a gaming image is projected on an image display area defined in a game board of a game machine, in accordance with a gaming state, and that, when a predetermined condition has been satisfied, an information displaying image representing information other than information of a game with the game machine is projected on, at least, part of the image display area.

Besides, a display method according to the present invention consists in that a gaming image is projected on an image display area defined in a game board of a game machine, in accordance with a gaming state, and that, when a predetermined condition has been satisfied, an advertising image being an information displaying image is projected on, at least, part of the image display area.

Besides, a display method according to the present invention consists in the above display method in which, when the predetermined condition has been satisfied, the information displaying image is projected on the whole image display area.

Further, a display method according to the present invention consists in the above display method in which, when the predetermined condition has failed to be satisfied in a state where said information displaying image is being projected, the gaming image is projected on the image display area.

Besides, a display method according to the present invention consists in the above display method in which, when a player has come close to the game machine within a predetermined distance range, the gaming image is projected by deciding that the predetermined condition has failed to be satisfied.

Further, a display method according to the present invention consists in the above display method in which, upon lapse of a predetermined time period since the game machine has shifted into a non-gaming state, the information displaying image is projected by deciding that the predetermined condition has been satisfied.

Besides, a display method according to the present invention consists in the above display method in which, in order that the single information

displaying image may be displayed extending over all the image display areas of a plurality of adjacent game machines satisfying the predetermined condition, divided images obtained by dividing the single information displaying image are projected on the respective image display areas of the game machines satisfying the predetermined condition.

Besides, a display apparatus for a game machine according to the present invention consists, in a display apparatus for a game machine, having a projection mechanism which projects a gaming image on an image display area defined in a game board of the game machine, and a control unit which causes the projection mechanism to project the gaming image corresponding to a gaming state, in that, when a predetermined condition has been satisfied, the control unit causes the projection mechanism to project an information displaying image representing information other than information of a game with the game machine, on at least part of the image display area.

Besides, a display apparatus for a game machine according to the present invention consists of, in a display apparatus for a game machine, having a projection mechanism which projects a gaming image on an image display area defined in a game board of the game machine, and a control unit which causes the projection mechanism to project the gaming image corresponding to a gaming state, in that, when a predetermined condition has been satisfied, the control unit causes the projection mechanism to project an advertising image being an information displaying image, on at least part of the image display area.

Besides, a display apparatus for a game machine according to the present invention consists in the above display apparatus for a game machine,

in which the predetermined condition has been satisfied, the control unit causes the projection mechanism to project the information displaying image on the whole image display area.

Further, a display apparatus for a game machine according to the present invention consists in the above display apparatus for a game machine, in which, when the predetermined condition has failed to be satisfied in a state where the control unit is causing the projection mechanism to project the information displaying image, the control unit causes the projection mechanism to project the gaming image on the whole image display area.

Besides, a display apparatus for a game machine according to the present invention consists in the above display apparatus for a game machine, which comprises a storage unit that stores therein image data concerning the information displaying image, and in which, when the predetermined condition has been satisfied, the control unit generates displaying image data for causing the projection mechanism to display the information displaying image, on the basis of the image data stored in the storage unit, so as to output the generated data to the projection mechanism, and the projection mechanism projects the information displaying image on the basis of the displaying image data outputted by the control unit.

Further, a display apparatus for a game machine according to the present invention consists in the above display apparatus for a game machine, in which when the predetermined condition has been satisfied, the control unit generates displaying image data for causing the projection mechanism to display the information displaying image, on the basis of image data outputted by an external device, so as to output the generated data to the projection

mechanism, and the projection mechanism projects the information displaying image on the basis of the displaying image data outputted by the control unit.

Besides, a display apparatus for a game machine according to the present invention consists in the above display apparatus for a game machine, in which, when the control unit has determined that a player has come close to the game machine within a predetermined distance range, on the basis of a sensor signal outputted by a person sensor, it causes the projection mechanism to project the gaming image, by deciding that the predetermined condition has failed to be satisfied.

Further, a display apparatus for a game machine according to the present invention consists in the above display apparatus for a game machine, in which, upon lapse of a predetermined time period since a point of time when the control unit has determined that the game machine has shifted into a non-gaming state, on the basis of a gaming-state notifying signal outputted by a gaming-state detection unit for detecting a gaming state of the game machine, the control unit causes the projection mechanism to project the information displaying image, by deciding that the predetermined condition has been satisfied.

Besides, a game machine according to the present invention consists in comprising the above display apparatus for a game machine, and a main control unit which causes the display apparatus for a game machine to project the gaming image and the information displaying image.

Further, a game machine according to the present invention consists in the above game machine, in which, when a control signal for displaying the information displaying image has been output by an external control device, the

main control unit causes the display apparatus for a game machine to project the information displaying image, by deciding that the predetermined condition has been satisfied.

Besides, a game machine according to the present invention consists in the above game machine, which includes a person sensor that outputs a sensor signal permitting the control unit to determine whether or not a player has come close to the game machine within a predetermined distance range, and in which, when the main control unit has discriminated that the player has come close within the predetermined distance range, on the basis of the sensor signal output by the person sensor, it causes the display apparatus for a game machine to project the information displaying image, by deciding that the predetermined condition has failed to be satisfied.

Further, a game machine according to the present invention consists in the above game machine, which includes a gaming-state detection unit that detects a gaming state of the game machine so as to output a gaming-state notifying signal, and in which, upon lapse of a predetermined time period since a point of time when the main control unit has determined that the game machine has shifted into a non-gaming state, on the basis of the gaming-state notifying signal output by the gaming-state detection unit, the main control unit causes the display apparatus for a game machine to project the information displaying image, by deciding that the predetermined condition has been satisfied.

Besides, a game machine according to the present invention consists in comprising the above display apparatus for a game machine.

Besides, an information display system according to the present invention consists in comprising a plurality of game machines each of which includes the above display apparatus for a game machine, and a control device being the external device, which includes a storage unit for storing therein the image data concerning the information displaying images to be displayed on the individual game machines, and which outputs the image data to the display apparatus for a game machine, of each game machine.

Further, an information display system according to the present invention consists in the above information display system, in which, in order that the single information displaying image may be displayed extending over all the image display areas of a plurality of adjacent ones of the game machines as satisfy the predetermined condition, the control device outputs the image data for projecting divided images obtained by dividing the single information displaying image, to the display apparatuses for game machines, of the respective game machines.

Besides, an information display system according to the present invention consists in the above information display system, in which the control device outputs the image data acquired through a communication network, to the display apparatuses for game machines, of the respective game machines.

According to the display method, the display apparatus for a game machine, the game machine and the information display system, when the game machine is in a state where the predetermined condition is satisfied (for example, when a player does not exist, or when the game machine is in a non-gaming state), the information displaying image (such as an advertising image) is projected on, at least, part of the game board(image display area), whereby

various information items such as the advertising image can be displayed at a low cost and by a novel method as the occupation of the space of the interior of a parlor (hall) by display devices used exclusively for displaying information is avoided. In this case, when the player does not exist or when the game machine is in the non-gaming state, the information displaying image is projected on the whole game board (whole display area), whereby the various information items can be displayed without forming any obstacle to a game which is the original purpose of use of the game machine.

Besides, when the predetermined condition has failed to be satisfied in a state where the information displaying image is being projected on the whole game board, the gaming image is projected on the whole game board, whereby by way of example, the game machine in the non-gaming state can be caused to continue projecting the information displaying image, and the game machine to start the game can be caused to display the gaming image and to immediately start the game. In this case, due to the adoption of the construction in which the gaming image is projected when the player has come close to the game machine by a predetermined distance, the gaming image can be changed-over and displayed at an accurate timing.

Besides, one information displaying image is displayed extending over the respective game boards of the game machines in the states where the predetermined condition is satisfied, among the plurality of adjacent game machines, whereby one information displaying image can be displayed on an area which is larger than the area of a display method wherein one information displaying image is displayed for one game machine, so that even a person who is far away from the game machines can be reliably caused to visually

recognize the information displaying image, and the display contents of the information displaying image can be deeply impressed upon the person at that time. Therefore, when the advertising image is projected as the information displaying image, an advertisement can be effectively placed. Further, the individual game machines are caused to project the information displaying images, on the basis of the image data acquired through the communication network, whereby the display method can display a new information displaying image acquired every moment, as compared with a display method wherein information displaying images are displayed on the basis of, for example, only information displaying image data pre-stored in the storage unit of a control device.

Brief Description of the Drawings

Fig. 1 is a block diagram showing the construction of an information display system according to an embodiment of the present invention, and the state of the connection between the information display system and a data distributing server.

Fig. 2 is a block diagram showing the construction of a *pachinko* machine.

Fig. 3 is a front view showing the schematic construction of the *pachinko* machine.

Fig. 4 is a side sectional view showing the schematic construction of the *pachinko* machine.

Fig. 5 is a flow chart of a display control process.

Fig. 6 is a front view of a state where one advertising image Gp is projected on several *pachinko* machines.

Fig. 7 is a front view of a state where any of the advertising image Gp, a television image Gt and a gaming image Gy is projected on each of the *pachinko* machines.

Fig. 8 is a front view of a state where the gaming images Gy in each of which the advertising image Gp is overlapped, the gaming image Gy in which the television image Gt is overlapped, and only the gaming image Gy are projected on the *pachinko* machines.

Fig. 9 is a front view showing the schematic construction of an information display system according to another embodiment of the present invention.

Fig. 10 is a front view in a state where any of an advertising image Gp, a television image Gt and a gaming image Gy is projected on each of several slot machines.

Fig. 11 is a front view showing the schematic construction of a slot machine.

Fig. 12 is a side sectional view showing the schematic construction of the slot machine.

Fig. 13 is a front view of a state where the gaming images Gy in which the advertising image Gp is overlapped, the gaming image Gy in which the television image Gt is overlapped, and only the gaming image Gy are projected on the slot machines.

Fig. 14 is a front view showing the schematic construction of an information display system according to another embodiment of the present invention.

Fig. 15 is a front view showing the schematic construction of a pinball machine.

Fig. 16 is a side sectional view showing the schematic construction of the pinball machine 201.

Detailed Description

Now, preferred embodiments of a display method, a display apparatus for a game machine, a game machine and an information display system according to the present invention will be described with reference to the accompanying drawings.

First of all, the construction of an information display system 51 will be described with reference to Fig. 1. The information display system 51 includes a plurality of *pachinko* machines 1, 1 ·· which are installed in a *pachinko* parlor, and an information displaying server (managing server) 52 which is connected to the respective *pachinko* machines 1, 1 ·· and which functions to display various information images, such as an advertising image Gp and a television image Gt (refer to Figs. 6 - 8), corresponding to information displaying images in the present invention. In this case, the advertising image Gp in the embodiment of the present invention shall be an image in a concept which includes both an advertising image relevant to *pachinko* and an advertising image irrelevant to *pachinko*, and the form of the image shall include both a still image and a moving image. Besides, the television image Gt is any of various

television images in a concept which includes the image of television broadcasting based on ground waves, that of BS television broadcasting, that of CS television broadcasting, that of Internet television broadcasting, etc., and the contents of the broadcasting include a sportscast and other various entertainment programs, a weather forecast, a newscast, etc.

The information displaying server 52 corresponds to a control device in the present invention. By way of example, one information displaying server 52 is installed in a management room in every *pachinko* parlor, and it is connected through a LAN (Local Area Network) to the *pachinko* machines 1, 1 ·· in the *pachinko* parlor. The information displaying server 52 generally controls information display based on each *pachinko* machine 1, and notifies a manager of ball clogging information, etc. concerning each *pachinko* machine 1. In this case, the form of the connection between the information displaying server 52 and the *pachinko* machine 1 may be either of a wired connection or a wireless connection. Besides, a control program (program for a display control process 70 to be described later) for displaying various information images on the individual *pachinko* machines 1, 1 ·· in accordance with the respective play states of the adjacent *pachinko* machines 1, 1 ·· is installed in the information displaying server 52. Further, the information displaying server 52 is constructed so as to be connectable to a data distributing server 62 through a public switched network 61 (one example of a communication network in the present invention) such as an ISDN line, an ADSL line or an optical information communication line. It receives information displaying data Di (digital contents for displaying the television image Gt, etc.) distributed by the data distributing server 62 and stores the received data in a built-in or externally-mounted hard

disk drive (which is not shown, and which shall be also termed "hard disk" below) or the like, and it outputs the information displaying data Di to the individual *pachinko* machines 1, 1 ·· in which a predetermined condition is satisfied. In this case, not only the information displaying data Di distributed by the data distributing server 62, but also information displaying data Di for displaying the advertising image Gp concerning the *pachinko* parlor where the information displaying server 52 is installed, are stored in the hard disk of the information displaying server 52. Besides, regarding the data distributing server 62, both a data distribution server dedicated to the information display systems 51 and a data laying-open server which opens various image data to the public are included. Incidentally, the function of reporting the ball clogging information, etc., among the functions of the information displaying server 52 has heretofore been known and shall be omitted from description.

Next, the construction of a *pachinko* machine 1 will be described with reference to the drawings. The *pachinko* machine (game machine) 1 is, for example, one of a "*Seven* Machine" type in which a "big hit prize" is given by lot. It is so constructed that, as shown in Fig. 3, a gaming image Gy (in this case, the ground, Mt. Fuji and numerals "123") or the like can be projected on the game board 21 of the *pachinko* machine by a rear projection system. As shown in Fig. 2, the *pachinko* machine 1 includes a game mechanism 2, a main control unit 3, a main storage unit 4, a display apparatus 5 and a person sensor 6. In this case, the person sensor 6 is constructed of an infrared sensor by way of example, and it is disposed on the front panel (refer to Fig. 3) of the *pachinko* machine 1. The person sensor 6 outputs a sensor signal S1 to the main control unit 3 when a player exists in front of the *pachinko* machine 1.

As shown in Fig. 4, the game mechanism 2 is constructed including the game board 21 and a switching mechanism 27. As shown in Fig. 3, the game board 21 is formed in a rectangular shape out of a light transmitting resin as a whole, and it is so constructed that shot balls are movable within a circular game portion 21a defined by a frame member F. In this case, as shown in Fig. 4, in the game portion 21a, a plurality of nails 22, 22 ·· are fixed, and a start chucker 23, a big hit prize hole (attacker) 24, hit prize holes 25, 25 (refer to Fig. 3), pinwheels 26, 26 (refer to Fig. 3), etc. are disposed. Besides, a door 28 in which a transparent glass 28a is fitted is disposed in front of the game board 21, whereby the outer edge part of the game board 21 is covered with the edge member (frame member for fitting the glass 28a therein) of the door 28. Further, a screen film 32 for projecting the gaming image Gy, etc. is adhered to the rear surface of the game board 21. In this case, the whole surface of the game board 21 corresponds to an image display area in the present invention. The switching mechanism 27 is mounted behind the game board 21 so as to open and shut the big hit prize hole 24.

The main control unit 3 generally controls both the game mechanism 2 and the display apparatus 5, and it supplies the display apparatus 5 with a command C corresponding to a gaming state, whereby the display apparatus 5 is caused to display the gaming image Gy, the advertising image Gp, the television image Gt, or the like (hereinbelow, also termed "display image G" when the above image is not distinguished). In this case, the designation of a display procedure for displaying the display image G, the designation of a pattern, etc. are included in the command C which is outputted by the main control unit 3. Besides, the main control unit 3 determines whether or not the

player exists in front of the *pachinko* machine 1 (determines whether the *pachinko* machine 1 is in the gaming state or a non-gaming state), on the basis of the sensor signal S1 output by the person sensor 6, and subject to the non-gaming state, it supplies the information displaying server 52 with a state notification signal S2 notifying to that effect. Further, when a control signal S3 has been output by the information displaying server 52 after the output of the state notification signal S2, the main control unit 3 supplies the display apparatus 5 with the command C for displaying the advertising image Gp, the television image Gt or the like in accordance with the contents of the control signal S3. The main control unit 4 stores the operating program of the main control unit 3, etc. therein.

As shown in Fig. 2, the display apparatus 5 is constructed including an image displaying optical system 11, a display control unit 12, a RAM 13, a display-procedure-data storage unit 14, a VRAM 15 and an image-data storage unit 16. As shown in Fig. 4, the image displaying optical system 11 includes a projector unit 31, the screen film 32, a mirror 33 and a Fresnel lens 34. The projector unit 31 corresponds to a projection mechanism in the present invention, and emits projection light L which has been modulated on the basis of displaying image data Dg outputted by the display control unit 12. In particular, the projector unit 31 is constructed including, for example, a light source lamp, modulation means for modulating white light emitted by the light source lamp, into the projection light L (by way of example, a liquid-crystal light valve which includes a liquid crystal panel, an incident-side polarizer plate and an irradiation-side polarizer plate), and a projection lens for enlarging the projection light L. The screen film 32 is adhered to the rear surface of the game

board 21, and it receives the projection light L emitted by the projector unit 31 and reflected by the mirror 33, thereby to image any of the various display images G. The mirror 33 reflects the projection light L emitted by the projector unit 31, toward the screen film 32. The Fresnel lens 34 transforms the projection light L into parallel light, and projects the parallel light onto the screen film 32.

The display control unit 12 corresponds to a control unit in the present invention, and it generates the displaying image data Dg in compliance with the command C output by the main control unit 3 and outputs the generated data to the projector unit 31, whereby the projection light L for displaying any of the various display images G is emitted. The RAM 13 temporarily stores therein various data generated by the display control unit 12, the arithmetic results of the display control unit 12, and so forth. The display-procedure-data storage unit 14 stores therein display procedure data Ds in which the designation of image data for use in the generation of the displaying image data Dg, a position and a size for displaying an image, the designation of a display time period, etc. are described, the operating program of the display control unit 12, and so forth. The VRAM 15 stores therein the displaying image data Dg which have been generated in such a way that images corresponding to image data Dp, Dp ·· are virtually depicted by the display control unit 12. The image-data storage unit 16 corresponds to a storage unit in the present invention, and it stores therein the image data Dp, Dp ·· (image data of an image with numerals depicted and a background image) for generating the displaying image data Dg, and the information displaying data Di outputted by the information displaying server 52.

Subsequently, the overall operation of the information display system 51 will be described with reference to the drawings. In the information display system 51, when power sources have been turned ON for the information displaying server 52 and the *pachinko* machines 1, 1 ·· in, for example, opening the *pachinko* parlor (when the information display system 51 has been started), the main control unit 3 of each of the *pachinko* machines 1, 1 ·· first determines whether or not the corresponding *pachinko* machine 1 is in the gaming state, on the basis of the sensor signal S1 of the person sensor 6. Here at the start of the information display system 51, the main control unit 3 determines the non-gaming state (one example of the time "when a predetermined condition has been satisfied" in the present invention), and it supplies the information displaying server 52 with the state notification signal S2 notifying to that effect. On the other hand, the information displaying server 52 starts a display control process 70 shown in Fig. 5, at the turn-ON of the power source. In the display control process 70, the information displaying server 52 determines the gaming state of each of the *pachinko* machines 1, 1 ··, on the basis of the state notification signal S2 output by the *pachinko* machine 1, and it outputs the control signal S3 corresponding to the result of the determination , whereby the *pachinko* machine 1 is caused to display any of the various display images G.

In particular, the information displaying server 52 first determines whether or not all of the *pachinko* machines 1, 1 ·· belonging to one "island" (a plurality of pachinko machines arranged in a line at the back of a plurality of pachinko machines arranged side by side) are in gaming states, on the basis of the state notification signals S2 output by the respective *pachinko* machines 1, 1 ·· (step 71). On this occasion, when any (or all) of the *pachinko* machines 1, 1

·· is/are in the non-gaming state/states, the information displaying server 52 determines whether or not at least two adjacent *pachinko* machines 1 are in the non-gaming states (step 72). Subsequently, when at least two machines are in the non-gaming states, one advertising image Gp is displayed extending over the respective game boards 21, 21 ·· of the adjacent *pachinko* machines 1, 1 ·· in the non-gaming states as shown in Fig. 6 (step 73). In this case, immediately after the opening of the *pachinko* parlor, the display processing for one advertising image Gp by the step 73 is executed after the determination processing of the step 72. By way of example, when four *pachinko* machines 1a - 1d are in non-gaming states as shown in the figure, the information displaying server 52 supplies the respective *pachinko* machines 1a - 1d with the control signals S3 for causing them to display advertising images Gp1 - Gp4 (divided images in the present invention). Thus, one advertising image Gp (for example, an image where a character string "Redecorating opening on the 1st!!" is depicted) is displayed on the *pachinko* machines 1a - 1d. Thereafter, the information displaying server 52 returns to the step 71 so as to monitor the gaming states of the individual *pachinko* machines 1, 1 ··.

On the other hand, when it has been determined at the step 72 that any of the adjacent *pachinko* machines 1, 1 is in the gaming state (a state where a player is detected by the person sensor 6), the information displaying server 52 causes the *pachinko* machine 1 in the non-gaming state to display either of the advertising image Gp and the television image Gt (step 74) and causes the *pachinko* machine 1 in the gaming state to display the gaming image Gy (step 75), as shown in Fig. 7. Herein, when the three machines of the *pachinko* machines 1a, 1c, 1d are in the non-gaming states as shown in the figure, the

information displaying server 52 supplies the *pachinko* machine 1b in the gaming state with the control signal S3 for causing it to display the gaming image Gy, it supplies the *pachinko* machines 1a, 1d with the control signals S3 for causing them to display the advertising image Gp, and it supplies the *pachinko* machine 1c with the control signal S3 for causing it to display the television image Gt (of, for example, a sportscast). Thus, as shown in the figure, the gaming image Gy, the advertising image Gp and the television image Gt are respectively displayed on the corresponding *pachinko* machines 1, 1 ··. Thereafter, the information displaying server 52 returns to the step 71 so as to monitor the gaming states of the individual *pachinko* machines 1, 1 ··.

Besides, when it has been determined at the step 71 that all of the *pachinko* machines 1, 1 ·· are in gaming states, the information displaying server 52 causes each of the *pachinko* machines 1, 1 ·· to display the gaming image Gy in which the advertising image Gp or the television image Gt is partly overlapped, as shown in Fig. 8 (step 76). Herein, as shown in the figure, the information displaying server 52 supplies, for example, the *pachinko* machines 1a, 1c with the control signals S3 for causing them to display the respective gaming images Gy in each of which the advertising image Gp is overlapped , and it supplies the *pachinko* machines 1b, 1d with the control signals S3 for causing them to display the respective gaming images Gy in each of which the television image Gt is composed. Thus, as shown in the figure, the gaming images Gy in each of which the advertising image Gp or the television image Gt is overlapped are displayed on the respective *pachinko* machines 1, 1 ··. Thereafter, the information displaying server 52 returns to the step 71 so as to monitor the gaming states of the individual *pachinko* machines 1, 1 ··. By the

way, in the *pachinko* machine 1 which is displaying, for example, a "reach action" as in the *pachinko* machine 1d shown in the figure, even when the control signal S3 for displaying the gaming image Gy in which the advertising image Gp or the television image Gt is composed has been output by the information displaying server 52, the main control unit 3 causes the display apparatus 5 to display the gaming image Gy on the whole surface of the game board 21. As shown in the figure, accordingly, the gaming image Gy in which neither of the advertising image Gp and the television image Gt is overlapped is displayed on the *pachinko* machine 1d displaying the reach action.

Subsequently, a method of displaying the display image G by the information display system 51 will be described centering around the operation of the *pachinko* machine 1 with reference to the drawings. At the start of the information display system 51, as stated before, the main control units 3 of the *pachinko* machines 1, 1 ·· determine whether or not these machines are in the gaming states, on the basis of the sensor signals S1, and they supply the information displaying server 52 with the state notification signals S2 notifying the determined results, respectively. On this occasion, the information displaying server 52 has started the display control process 70 described before. In this case, when four adjacent *pachinko* machines 1, 1 ··, for example, are in the non-gaming states, the information displaying server 52 supplies the *pachinko* machines 1, 1 ·· in the non-gaming states with the control signals S3 instructing them to display the advertising images Gp1 - Gp4 obtained by dividing one advertising image Gp. At the same time, the information displaying server 52 determines the number of the divisions of the advertising image Gp in accordance with the number (in this case, four) by which the *pachinko*

machines 1 in the non-gaming states succeed, and it generates the information displaying data Di as to the respective advertising images Gp1 - Gp4 with the advertising image Gp divided by the determined number of the divisions. Subsequently, the information displaying server 52 outputs the generated information displaying data Di to the *pachinko* machines 1a - 1d, respectively.

On the other hand, in each *pachinko* machine 1 which has received the control signal S3, the main control unit 3 outputs the command C instructing the display apparatus 5 to display the display image G on the basis of the input information displaying data Di, in accordance with the contents of the control signal S3. In compliance with the command C, in the display apparatus 5, the display control unit 12 loads the display procedure data Ds from the display-procedure-data storage unit 14 in accordance with the contents instructed by the command C. Subsequently, the display control unit 12 once stores the input information displaying data Di in the image-data storage unit 16 in accordance with the loaded display procedure data Ds. Subsequently, the display control unit 12 executes predetermined image processing for the information displaying data Di stored in the image-data storage unit 16, thereby to generate in the VRAM 15 the displaying image data Dg for displaying any of the advertising images Gp1 - Gp4 (which of the display images G is to be displayed, has been determined by the information displaying server 52). On this occasion, the display control unit 12 generates the displaying image data Dg in such a way that the image corresponding to the information displaying data Di is virtually depicted in the VRAM 15. Subsequently, the display control unit 12 outputs the displaying image data Dg within the VRAM 15 to the projector unit 31.

In response to the output, the projector unit 31 modulates the white light emitted by the light source lamp, into the projection light L shaded and colored in correspondence with the display image G, on the basis of the outputted displaying image data Dg, and it emits the modulated projection light L. On this occasion, the projection light L emitted by the projector unit 31 is reflected by the mirror 33 and then passed through the Fresnel lens 34, thereby to be transformed into the parallel light, which is projected on the screen film 32. Thus, as shown in Fig. 6, any of the advertising images Gp1 - Gp4 is imaged (projected) on the game panel 21. The *pachinko* machines 1a - 1d execute the image display processing steps, respectively, whereby one advertising image Gp is projected extending over the game panels 21, 21 ·· of the *pachinko* machines 1a - 1d disposed in succession, as shown in the figure.

Meanwhile, when a player has started a game with the *pachinko* machine 1, the state notification signal S2 notifying to the effect that the gaming state has been established is output from the *pachinko* machine 1 having fallen into the gaming state, to the information displaying server 52. Herein, when any of the adjacent *pachinko* machines 1, 1 has fallen into the gaming state by way of example, the information displaying server 52 supplies the *pachinko* machine 1 in the gaming state with the control signal S3 instructing it to display the gaming image Gy on the whole game board 21. Besides, the information displaying server 52 supplies the *pachinko* machine 1 in the non-gaming state with the control signal S3 instructing it to display either the advertising image Gp or the television image Gt on the whole game board 21. On this occasion, by way of example, the information displaying server 52 causes any of the *pachinko* machines 1, 1 ··, which belong to one "island" and which are in the

non-gaming states, to display the television image Gt, and it causes the other *pachinko* machines 1, 1 ·· in the non-gaming states to display the advertising images Gp, respectively.

In this case, in the *pachinko* machine 1 which has received the control signal S3 for displaying the advertising image Gp, the main control unit 3 supplies the display apparatus 5 with the command C instructing it to display the advertising image Gp on the basis of the information displaying data Di output by the information displaying server 52. In compliance with the command, the display control unit 12 generates the displaying image data Dg in the VRAM 15 on the basis of the information displaying data Di output by the information displaying server 52 (the information displaying data Di for displaying the advertising image Gp), and it outputs the generated data Dg to the projector unit 31. In response to the output, the projector unit 31 modulates the light of the light source into the projection light L for displaying the advertising image Gp, on the basis of the output displaying image data Dg, and it emits the projection light L. Thus, as shown in Fig. 7, one advertising image Gp is projected on the whole game boards 21 (screen film 32) in each of, for example, the *pachinko* machines 1a, 1d.

Besides, in the *pachinko* machine 1 which has received the control signal S3 for displaying the television image Gt, the main control unit 3 supplies the display apparatus 5 with the command C instructing it to display the television image Gt on the basis of the information displaying data Di output by the information displaying server 52. On this occasion, while downloading the information displaying data Di for displaying the television image Gt on, for example, the *pachinko* machine 1c, through the public switched network 61

from the data distributing server 62, and storing the downloaded data Di in the hard disk, the information displaying server 52 sequentially sends the information displaying data Di to the display control unit 12 of the *pachinko* machine 1c. On the other hand, in the display apparatus 5, the display control unit 12 generates the displaying image data Dg in the VRAM 15 on the basis of the information displaying data Di output by the information displaying server 52 (the information displaying data Di for displaying the television image Gt), and it outputs the generated data Dg to the projector unit 31. In response to the output, the projector unit 31 modulates the light of the light source into the projection light L for displaying the television image Gt, on the basis of the output displaying data Dg, and it emits the projection light L. Thus, as shown in Fig. 7, the television image Gt is projected on the whole game board 21 in the *pachinko* machine 1c.

Besides, in the *pachinko* machine 1 (*pachinko* machine 1 in the gaming state) which has received the control signal S3 for displaying the gaming image Gy, the main control unit 3 supplies the display apparatus 5 with the command C instructing it to display the gaming image Gy. In compliance with the command, the display control unit 12 reads out the display procedure data Ds from the display-procedure-data storage unit 14 in accordance with contents instructed by the command C. Subsequently, the display control unit 12 reads out the image data Dp, Dp ·· stored in the image data storage unit 16 and generates in the VRAM 15 the displaying image data Dg for displaying the gaming image Gy, in accordance with the display procedure data Ds, and it sequentially outputs the generated data Dg to the projector unit 31. In response to the output, the projector unit 31 modulates the light of the light source into the

projection light L for displaying the gaming image Gy, on the basis of the displaying image data Dg outputted by the display control unit 12, and it emits the projection light L. Thus, as shown in Fig. 7, the gaming image Gy is projected on the whole game board 21 in the *pachinko* machine 1b. In this case, the main control unit 3 sequentially supplies the display control unit 12 with the commands C for displaying the various gaming images Gy in accordance with the gaming states of the *pachinko* machine 1b. In compliance with the commands, the display control unit 12 changes-over and displays the gaming images Gy which correspond to contents instructed by the commands C.

Meanwhile, when a player has sat in front of the *pachinko* machine 1 in the non-gaming state (for example, the *pachinko* machine 1a, 1c or 1d shown in Fig. 7), the sensor signal S1 is output by the person sensor 6 of the pertinent *pachinko* machine 1. In response to the output, the display control unit 12 supplies the information displaying server 52 with the state notification signal S2 notifying to the effect that the *pachinko* machine 1 has fallen into the gaming state. In response to the signal S2, the control signal S3 which instructs the main control unit 3 of the *pachinko* machine 1 to display the gaming image Gy is outputted from the information displaying server 52. Thus, the command C which gives the instruction of displaying the gaming image Gy is outputted to the display control unit 12 by the main control unit 3. Subsequently, as described above, the displaying image data Dg for displaying the gaming image Gy is output to the projector unit 31 by the display control unit 12, and the gaming image Gy is displayed on the game board 21 of the *pachinko* machine 1. Besides, when the player has left the pertinent *pachinko* machine 1, the

output of the sensor signal S1 by the person sensor 6 of the *pachinko* machine 1 is stopped. On this occasion, the state notification signal S2 notifying to the effect that the *pachinko* machine 1 has fallen into the non-gaming state is output to the information displaying server 52 by the display control unit 12. In response to the output, the information displaying server 52 outputs the control signal S3 which gives the instruction of displaying the advertising image Gp or the television image Gt, upon lapse of a predetermined time period (for example, upon lapse of 30 seconds to one minute or so) since the state notification signal S2 indicating the establishment of the non-gaming state has been output from the main control unit 3. Thus, the advertising image Gp or the television image Gt is displayed on the whole game board 21 of the *pachinko* machine 1 as to which the predetermined time period has lapsed since the establishment of the non-gaming state.

Meanwhile, when the information displaying server 52 has determined that all of the *pachinko* machines 1, 1 ·· belonging to one "island" have fallen into the gaming states, on the basis of the state notification signals S2 output from the respective *pachinko* machines 1, 1 ··, it supplies the *pachinko* machines 1, 1 ·· belonging to the "island", with the control signals S3 instructing them to overlap either of the advertising image Gp and the television image Gt with the gaming images Gy and display the resulting images, respectively. On this occasion, by way of example, the information displaying server 52 outputs the control signals S3 for displaying the gaming images Gy with the advertising image Gp composed therewith and the control signals S3 for displaying the gaming images Gy with the television image Gt overlapped therewith, alternately to the *pachinko* machines 1, 1 ·· installed in a lateral array. At the

same time, the information displaying server 52 supplies each corresponding *pachinko* machine 1 with the information displaying data Di concerning the advertising image Gp or the television image Gt which is composed with the gaming image Gy.

In this case, in the *pachinko* machine 1 which has been instructed to overlap the advertising image Gp (or television image Gt) with the gaming image Gy and display the resulting image, the main control unit 3 supplies the display control unit 12 with the command C which gives the instruction of overlapping the display image G (in this case, the advertising image Gp or the television image Gt) generated on the basis of the information displaying data Di outputted by the information displaying server 52, with the gaming image Gy generated on the basis of the predetermined display procedure data Ds, and then displaying the resulting image. In compliance with the command, the display control unit 12 first reads out the display procedure data Ds from the display-procedure-data storage unit 14 and also reads out the image data Dp, Dp ·· from the image-data storage unit 16 in accordance with the contents of the command C, and generates the displaying image data Dg for the gaming image Gy, in the VRAM 15.

Subsequently, the display control unit 12 executes the data processing between the information displaying data Di output from the information displaying server 52 and the displaying image data Dg in the VRAM 15, thereby to generate in the VRAM 15 the displaying image data Dg concerning the display image G in which the advertising image Gp (or television image Gt) is overlapped with the gaming image Gy. Subsequently, the display control unit 12 outputs the generated displaying image data Dg to the projector unit 31.

Thus, the projection light L is emitted by the projector unit 31, and as shown in Fig. 8, the display image G in which the advertising image Gp is overlapped with the gaming image Gy is projected on the game board 21 of the *pachinko* machine 1 (in this case, the game board 21 of the *pachinko* machine 1a or 1c), or the display image G in which the television image Gt is overlapped with the gaming image Gy is done thereon (on the game panel 21 of the *pachinko* machine 1b or 1d). Incidentally, at this point of time, the display image G in which the television image Gt is overlapped with the gaming image Gy is projected on the game board 21 of the *pachinko* machine 1d.

On this occasion, in the *pachinko* machine 1 which has started the display of a scene being important in the game (for example, the display screen of the reach action), only the gaming image Gy is projected on the whole game board 21, instead of a screen having been displayed before (a screen where the gaming image Gy and the advertising image Gp or television image Gt are overlapped). In particular, in the *pachinko* machine 1 which has fallen into a reach state, for example, the *pachinko* machine 1d which is shown in Fig. 8, even if the control signal S3 for causing the pertinent *pachinko* machine to display the gaming image Gy in which the advertising image Gp or television image Gt is overlapped is output by the information displaying server 52 at that point of time, the main control unit 3 supplies the display apparatus 5 with the command C for causing it to display only the gaming image Gy on the whole game board 21. Thereafter, in the *pachinko* machine 1d, when an ordinary fluctuating display has begun after the performance of the reach action, the main control unit 3 complies with the instruction of the control signal S3 and supplies the display apparatus 5 with the command C for causing it to overlap

the advertising image Gp or television image Gt with the gaming image Gy and display the resulting image. Thus, the gaming image Gy in which the advertising image Gp or television image Gt is overlapped is projected on the *pachinko* machine 1d in the same way as in each of the *pachinko* machines 1a - 1c.

In this manner, according to the information display system 51, when the information displaying server 52 has determined the nonexistence of a player in front of the *pachinko* machine 1 (when it has determined the non-gaming state), the display apparatus 5 of the *pachinko* machine 1 is caused to project the advertising image Gp, the television image Gt or the like on, at least, part of the game board 21, whereby various information items such as the advertising image Gp and the television image Gt can be displayed at a low cost and by a novel method as the occupation of the space of the interior of the parlor (hall) by monitors used exclusively for displaying information is avoided. In this case, the display apparatus 5 of the *pachinko* machine 1 in the non-gaming state is caused to project the advertising image Gp or the television image Gt on the whole game board 21, whereby the various information items can be displayed without forming any obstacle to the game which is the original purpose of use of the *pachinko* machine 1.

Besides, when a player has taken a seat at the *pachinko* machine 1 which is projecting the advertising image Gp or television image Gt on the whole game board 21, the gaming image Gy is projected on the whole game board 21, whereby the gaming image Gy can be displayed on the *pachinko* machine 1 on which a game is to be started, so as to immediately start the game, while the advertising image Gp or television image Gt is kept projected

on the *pachinko* machine 1 in the non-gaming state. In this case, due to the adoption of a construction in which the gaming image Gy is projected when the player has come close to the *pachinko* machine 1 within the range of a predetermined distance (when the sensor signal S1 has been output by the person sensor 6), the gaming image Gy can be changed-over and displayed at an accurate timing.

Besides, one advertising image Gp is displayed extending over the respective game boards 21 of the *pachinko* machines 1, 1 ·· in the non-gaming states, among the plurality of adjacent *pachinko* machines 1, 1 ··, whereby one advertising image Gp can be displayed on an area which is larger than the area of a display method wherein one advertising image Gp is displayed for one *pachinko* machine 1. Therefore, even a person who is far away from the *pachinko* machines 1, 1 ·· can be reliably caused to visually recognize the advertising image Gp, and the display contents of the advertising image Gp can be deeply impressed upon the person at that time. Further, the information displaying server 52 causes the individual *pachinko* machines 1, 1 ·· to project the advertising image Gp or television image Gt, on the basis of the information displaying data Di distributed (acquired) from the data distributing server 62 through the public switched network 61, whereby the display method can display a new television image Gt or advertising image Gp acquired every moment, as compared with a display method wherein the advertising image Gp, etc. are displayed on the basis of, for example, only the information displaying data Di stored beforehand in the hard disk of the information displaying server 52.

Next, an information display system 100 according to another embodiment of the present invention will be described with reference to the drawings. By the way, the information display system 100 or an information display system 200 to be described later, of the present invention is basically applied as in the information display system 51. Accordingly, the same numerals and signs will be assigned to the same constituents as in the information display system 51 and shall be omitted from repeated description. As shown in Fig. 9, the information display system 100 includes a plurality of (in this case, four) slot machines (game machines) 101a - 101d (hereinbelow, also termed "slot machines 101" when they are not distinguished) which are installed in the game center by way of example, and an information displaying server 52 which is connected to the respective slot machines 101. As shown in Fig. 11, the slot machine 101 is so constructed that various display images G (for example, a gaming image Gy which is shown in the figure and which indicates the amount of prize money changing every moment) can be projected on the game board 111 of this slot machine by a rear projection system. Besides, the slot machine 101 is constructed including an image displaying optical system 102 and a reel 103 as shown in Fig. 12. The image displaying optical system 102 includes a screen film 112 adhered to the game board 111, a mirror 113, a Fresnel lens 114 and a projector unit 31. The reel 103 is constructed including three cylindrical reels 103a - 103c (refer to Fig. 11) on each of which a plurality of patterns are depicted, and it is disposed on the rear side of a glass 115 which is disposed centrally of the front of the machine, as shown in Fig. 12. In this case, the reels 103a - 103c are stopped after having been rotated

predetermined numbers of revolutions in accordance with the manipulation of a handle 104 (refer to Fig. 11), respectively.

In the information display system 100, when power sources have been turned ON for the information displaying server 52 and the slot machines 101a - 101d, the information displaying server 52 starts the foregoing display control process 70 as in the information display system 51. On this occasion, when all the slot machines 101a - 101d are in non-gaming states by way of example, the information displaying server 52 supplies these slot machines 101a - 101d with control signals S3 for causing them to display advertising images Gp101 - Gp104 shown in Fig. 9, respectively. In response to the output, in the slot machine 101a by way of example, a main control unit 3 outputs a command C instructing a display apparatus 5 to display the advertising image Gp101. Subsequently, a display control unit 12 outputs displaying image data Dg to the projector unit 31 in compliance with the command C, and the projector unit 31 emits projection light L based on the displaying image data Dg. On this occasion, as shown in Fig. 12, the projection light L is reflected by the mirror 113 and is passed through the Fresnel lens 114, thereby to be projected on the screen film 112. Thus, as shown in Fig. 9, the advertising image Gp101 is displayed on the game board 111 of the slot machine 101a. Likewise, the slot machines 101b - 101d execute such image display processing steps, respectively, whereby as shown in the figure, one advertising image Gp (for example, an image where a character string "Redecorating opening on the 1st!!" is depicted) is displayed extending over the respective game boards 111, 111 ·· of the slot machines 101a - 101d disposed in succession.

Meanwhile, when any of the slot machines 101a - 101d is in a gaming state (state where a player has been detected by a person sensor 6 (refer to Fig. 11)), the information displaying server 52 supplies the slot machine 101 in the gaming state with the control signal S3 instructing it to display a gaming image Gy and also supplies the slot machine 101 in the non-gaming state with the control signal S3 instructing it to display either of an advertising image Gp or a television image Gt. Thus, when the slot machine 101b is in the gaming state and the slot machines 101a, 101c, 101d are in the non-gaming states as shown in Fig. 10 by way of example, the gaming image Gy is displayed on the slot machine 101b, the advertising image Gp is displayed on the slot machines 101a, 101d, and the television image Gt (for example, the image of a sportscast) is displayed on the slot machine 101c. Besides, when all of the slot machines 101a - 101d are in the gaming states, the information displaying server 52 supplies each of the slot machines 101a - 101d with the control signal S3 instructing it to display the gaming image Gy itself, or the gaming image Gy in which the advertising image Gp or the television image Gt is partly overlapped. Thus, as shown in Fig. 13, the gaming image Gy itself, or the gaming image Gy in which the advertising image Gp or the television image Gt is overlapped is displayed on each of the slot machines 101a - 101d.

In this manner, also in the information display system 100, when the slot machine 101 is in the non-gaming state (no game player exists in front), the display apparatus is caused to project the advertising image Gp, the television image Gt or the like on, at least, part of the game board 111 of the slot machine 101, whereby various information items such as the advertising image Gp and the television image Gt can be displayed at a low cost and by a novel method

as the occupation of the space of the interior of the parlor by monitors used exclusively for displaying information is avoided. Besides, when a player has taken a seat, the gaming image Gy is projected on the whole game board 111, whereby the player can immediately start a game. Besides, one advertising image Gp is displayed extending over the respective game boards 111 of the adjacent slot machines 101a - 101d, whereby one advertising image Gp can be displayed on an extended area. Therefore, even a person who is far away from the slot machines 101a - 101d can be reliably caused to visually recognize the advertising image Gp, and the display contents of the advertising image Gp can be deeply impressed upon the person at that time.

Incidentally, the slot machine 101 in the information display system 100 is not restricted to the above construction. By way of example, it is also possible to adopt a construction in which, instead of the reel 103, a reel image (gaming image Gy) simulating the operation of this reel 103 is projected. Also, a start button may be used instead of the handle 104.

On this occasion, a game board and a screen film are disposed at the central part of the front of the machine proper instead of the glass 115, and a Fresnel lens and a mirror for reflecting part of the projection light L toward the Fresnel lens are disposed on the rear side of the screen film. According to this construction, the advertising image Gp or the television image Gt can be displayed also on the display area of the reel image in the non-gaming state of the slot machine 101.

Besides, the information display system according to the present invention is not restricted to the information display systems 51, 100 described above, but it covers also an information display system which includes pinball

machines, etc. By way of example, the information display system 200 shown in Fig. 14 includes a plurality of (in this case, four) pinball machines (game machines) 201a - 201d (hereinbelow, also termed "pinball machines 201" when they are not distinguished), and an information displaying server 52 which is connected to the respective pinball machines 201. As shown in Fig. 15, the pinball machine 201 is so constructed that various accessories are mounted, and that various display images G, such as a television image Gt, a gaming image Gy and an advertising image Gp, (for example, the gaming image Gy indicative of the marks obtained as shown in the figure) can be projected on a game board 211 disposed on the upper side of the machine proper, by a rear projection system. Besides, as shown in Fig. 16, the pinball machine 201 is constructed including an image displaying optical system 202. The image displaying optical system 202 includes a screen film 212 adhered to the game board 211, a mirror 213, a Fresnel lens 214 and a projector unit 31. In this case, with the pinball machine 201, a pinball game is played in such a way that a ball is moved between the game board 211 and a glass 215 disposed on the upper surface of the machine.

In the information display system 200, an information displaying server 52 executes the foregoing display control process 70 and outputs a control signal S3 as in the information display system 51 or 100. Thus, when the four pinball machines 201a - 201d are in non-gaming states by way of example, one advertising image Gp (for example, an image where a character string "Redecorating opening on the 1st!!" is depicted) is displayed extending over the respective game boards 211, 211 ·· of the pinball machines 201a - 201d disposed in succession, as shown in Fig. 14. Besides, when any of the pinball

machines 201a - 201d is in a gaming state, any of the advertising image Gp, the television image Gt, the gaming image Gy, and an image in which they are overlapped is displayed on the game board 211 of each pinball machine 201 in accordance with the state of the pinball machine 201 (whether or not it is in the non-gaming state). In this manner, also in the information display system 200, when the pinball machine 201 is in the non-gaming state, the display apparatus is caused to project the advertising image Gp, the television image Gt or the like on, at least, part of the game board 211 of the pinball machine 201, so that the same effects as those of the information display system 51 or 100 can be attained.

Besides, the present invention is not restricted to its embodiments described above. By way of example, in each embodiment of the present invention, there has been described the example in which the presence or absence of a player (whether or not the game machine is in a non-gaming state) is determined on the basis of the sensor signal S1 output by the person sensor 6, and any of the various images is projected in accordance with the result of the determination. However, the present invention is not restricted to this example, but it can also adopt, for example, a construction in which a sensor is disposed in the handle 29 (refer to Fig. 3) of the *pachinko* machine 1 or the handle 104 (refer to Fig. 11) of the slot machine 101 so as to determine whether or not the *pachinko* machine 1 or the slot machine 101 is in a gaming state, by detecting whether or not a hand is touching the handle 29 or 104, and any of the various images is projected in accordance with the result of the determination. Further, it is also possible to adopt a construction in which a weight sensor is disposed in a chair for gaming as is mounted in front of the

pachinko machine 1 or the slot machine 101, so as to determine whether or not a player exists in front of the *pachinko* machine 1 or the slot machine 101 (whether or not the game machine is in a non-gaming state), on the basis of the sensor signal of the weight sensor. Also, the person sensor 6 is not restricted to the infrared sensor, but any of various sensors such as an optical sensor can be employed.

Besides, in each embodiment of the present invention, there has been described the example in which the display apparatus 5 of the *pachinko* machine 1, slot machine 101 or pinball machine 201 projects the advertising image Gp or the television image Gt on the basis of the information displaying data Di output by the information displaying server 52. However, the present invention is not restricted to this example, but it may well adopt, for example, a construction in which information displaying data Di for displaying the advertising image Gp are stored beforehand in the image-data storage unit 16 of the display apparatus 5 so as to project the gaming image Gy on the basis of the information displaying data Di. Further, each embodiment of the present invention has been described by mentioning as the example the construction in which the main control unit 3 discriminates the presence or absence of a player on the basis of the sensor signal S1 output by the person sensor 6. However, the present invention is not restricted to this example, but it can adopt a construction in which the person sensor 6 is connected to the display control unit 12 of the display apparatus 5 so as for the display control unit 12 to perform the determination on the basis of the sensor signal S1, or a construction in which the person sensor 6 is connected to the information displaying server 52 so as for the information displaying server 52 to perform the determination on

the basis of the sensor signal S1. Besides, in each embodiment of the present invention, there has been described the example in which the information displaying server 52 causes the *pachinko* machine 1, slot machine 101 or pinball machine 201 to display the television image Gt or the advertising image Gp, on the basis of contents determined by the display control process 70. However, it is also possible to adopt, for example, a construction in which a display-image selection switch is disposed in the *pachinko* machine 1, slot machine 101 or pinball machine 201 so as for a player to select which of the television image Gt and the advertising image Gp is to be displayed. Further, the game machines according to the present invention are not restricted to the *pachinko* machine, slot machine and pinball machine, but they cover various other game machines for a *pachislo* game, an arcade game, etc.

The entire disclosure of Japanese Patent Application Nos. 2002-220117 filed July 29, 2002 and 2003-080726 filed March 24, 2003 are incorporated by reference.